

Amendments to the Claims

1. (currently amended): A fibre for thermal bonding comprising a propylene polymer composition (A) having an MFR value from 4 to 50 g/10 min, and being selected from:
 - i) a crystalline propylene random copolymer or a crystalline propylene polymer composition selected from:
 - a) a copolymer or polymer composition containing at least 0.8% by weight of ethylene and optionally at least one of ~~one or more~~ C₄-C₁₀ α -olefins and having a melting temperature of 155° C or higher, a content of fraction soluble in xylene at room temperature lower than 5% by weight, a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95°C by temperature rising elution fractionation (TREF) with xylene to the xylene soluble fraction, higher than 8; and
 - b) a copolymer or polymer composition containing more than 2.5 wt% by weight of ethylene and optionally at least one of ~~one or more~~ C₄-C₁₀ α -olefins and having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95°C by TREF with xylene to the xylene soluble fraction at room temperature, higher than 4; and
 - ii) a crystalline propylene polymer composition having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight; the ~~said~~ composition containing at least one of (1) at least 0.64 wt% of ethylene and (2) and/or ~~and/or~~ C₄-C₁₀ α -olefin recurring unit and comprising (percent by weight):
 - I) 20-80% of at least one of a crystalline propylene homopolymer and a ~~and/or~~ crystalline propylene random copolymer containing at least one

of (i) up to 1.5% by weight of ethylene and (ii) and/or C₄-C₁₀ α -olefin;
and

II) 20-80% of a crystalline random copolymer selected from:

IIa) a copolymer of propylene with 0.8 to 10% by weight of ethylene;
provided that the difference in the ethylene content between
polymer I) ~~(I)~~ and polymer IIa) ~~(IIa)~~ is be at least 0.8 percentage
unit with respect to the weight of the (co)polymer concerned; and

IIb) a copolymer of propylene with 1.5 to 18% by weight of a C₄-C₁₀
 α -olefin and optionally ethylene; provided that the difference in
the comonomer content between polymer I) ~~(I)~~ and polymer IIb)
~~(IIb)~~ is be at least 1.5 percentage units with respect to the weight
of the (co)polymer concerned; and

IIc) a mixture of copolymer IIa) ~~(IIa)~~ and copolymer IIb) ~~(IIb)~~.

2. (currently amended): The fibre of claim 1 wherein the polymer composition ii) ~~(ii)~~
has a melting temperature of 155° C or higher, a content of fraction soluble in
xylene at room temperature lower than 5% by weight and a value of the ratio of the
polymer fraction collected at the temperature range from 25° to 95° C by TREF
with xylene to the xylene soluble fraction higher than 8; the said composition
containing at least one of (1) at least 0.64 wt% of ethylene and (2) and/or C₄-C₁₀ α -
olefin recurring unit and comprising (percent by weight):

I) 20-80% of at least one of a crystalline propylene homopolymer and a and/or
crystalline propylene random copolymer containing at least one of (i) up to
1.5% by weight of ethylene and (ii) and/or C₄-C₁₀ α -olefin; and

II) 20-80% of a crystalline random copolymer selected from:

IIa) a copolymer of propylene with 0.8 to 5% by weight of ethylene;
provided that the difference in the ethylene content between polymer I)
~~(I)~~ and polymer IIa) ~~(IIa)~~ is be at least 0.8 percentage unit with respect
to the weight of the (co)polymer concerned;

IIb) a copolymer of propylene with 1.5 to 12% by weight of a C₄-C₁₀ α -
olefin and optionally ethylene; provided that the difference in the
comonomer content between polymer I) ~~(I)~~ and polymer IIb) ~~(IIb)~~ is be

at least 1.5 percentage units with respect to the weight of the (co)polymer concerned; and

IIc) a mixture of copolymer IIa) ~~(IIa)~~ and copolymer IIb) ~~(IIb)~~.

3. (currently amended): The fibre of claim 1 ~~claims 1 and 2~~ wherein the polymer composition material ~~has~~ MFR values from 6 to 15 g/10 min.
4. (currently amended): The fibre of claim 1 ~~claims 1 to 3~~ wherein the difference in the ethylene content between polymer I) ~~(I)~~ and polymer IIa) ~~(IIa)~~ is at least 1 percentage unit with respect to the weight of the (co)polymer concerned.
5. (currently amended): The fibre of claim 1 ~~claims 1-4~~ having a value of bonding force at 150° C of at least 300 cN.
6. (currently amended): The fibre of claim 5 ~~obtained claims 5 and 6~~ obtainable by a spinning process wherein the composition is subjected to an extrusion temperature of at most 275° C ~~or less~~.
7. (currently amended): The fibre of claim 5 having a bonding force value of 300 to 800 cN and an MFR value of 50 g/10 min or less and being obtained ~~obtainable~~ by a spinning process wherein the composition is subjected to an extrusion temperature of at most 275° C ~~or less~~.
8. (currently amended): The fibre of claim 6 ~~claims 6-7~~ wherein the extrusion temperature ranges from 260° to 275° C.
9. (currently amended): A melt spin process for the production of a fibre for thermal bonding comprising the fibres according to claims 1-4 ~~characterised in that it is subjected to the process~~ a propylene polymer composition having an MFR value from 4 to 50 g/10 min and being selected from:
 - i) a crystalline propylene random copolymer or a crystalline propylene polymer composition selected from:
 - a) a copolymer or polymer composition containing at least 0.8% by weight of ethylene and optionally at least one of ~~one or more~~ C₄-C₁₀ α -olefins and having a melting temperature of 155° C or higher, a content of fraction soluble in xylene at room temperature lower than 5% by weight, a value of the ratio of the polymer fraction collected at the

- temperature range from 25° to 95° C by TREF with xylene to the xylene soluble fraction, higher than 8; and
- b) a copolymer or polymer composition containing more than 2.5 wt% by weight of ethylene and optionally at least one of ~~one or more~~ C₄-C₁₀ α -olefins and having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95°C by TREF with xylene to the xylene soluble fraction at room temperature, higher than 4; and
- ii) a crystalline propylene polymer composition having a melting temperature of at least 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 9% by weight; the said composition containing at least one of (1) at least 0.64 wt% of ethylene and (2) ~~and/or~~ C₄-C₁₀ α -olefin recurring unit and comprising (percent by weight):
- I) 20-80% of at least one of a crystalline propylene homopolymer and a ~~and/or~~ crystalline propylene random copolymer containing at least one of (i) up to 1.5% by weight of ethylene and (ii) ~~and/or~~ C₄-C₁₀ α -olefin; and:
- II) 20-80%, preferably from 30-70%, of a crystalline random copolymer selected from:
- IIa) a copolymer of propylene with 0.8 to 10% by weight of ethylene; provided that the difference in the ethylene content between polymer I) ~~(I)~~ and polymer IIa) ~~(IIa)~~ is be at least 0.8 percentage unit with respect to the weight of the (co)polymer concerned;
- IIb) a copolymer of propylene with 1.5 to 18% by weight of a C₄-C₁₀ α -olefin and optionally ethylene; provided that the difference in the comonomer content between polymer I) ~~(I)~~ and polymer IIb) ~~(IIb)~~ is be at least 1.5 percentage units with respect to the weight of the (co)polymer concerned; and
- IIc) a mixture of copolymer IIa) ~~(IIa)~~ and copolymer IIb) ~~(IIb)~~.

10. (currently amended): The process of claim 9 wherein polymer composition ii ~~(ii)~~ has a melting temperature of 155° C or higher, a content of fraction soluble in xylene at room temperature lower than 5% by weight, a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95° C by TREF with xylene to the xylene soluble fraction, higher than 8; the said composition containing at least one of (1) at least 0.64 wt% of ethylene and (2) and/or C₄-C₁₀ α-olefin recurring unit and comprising (percent by weight):
- I) 20-80% of at least one of a crystalline propylene homopolymer and a ~~and/or~~ crystalline propylene random copolymer containing at least one of (i) up to 1.5% by weight of ethylene and (ii) and/or C₄-C₁₀ α-olefin; and
 - II) 20-80% of a crystalline random copolymer selected from:
 - IIa) a copolymer of propylene with 0.8 to 5% by weight of ethylene; provided that the difference in the ethylene content between polymer I ~~(I)~~ and polymer IIa ~~(IIa)~~ is be at least 0.8 percentage unit with respect to the weight of the (co)polymer concerned;
 - IIb) a copolymer of propylene with 1.5 to 12% by weight of a C₄-C₁₀ α-olefin and optionally ethylene; provided that the difference in the comonomer content between polymer I ~~(I)~~ and polymer IIb ~~(IIb)~~ is be at least 1.5 percentage units with respect to the weight of the (co)polymer concerned;
 - IIc) a mixture of copolymer IIa ~~(IIa)~~ and copolymer IIb ~~(IIb)~~.
11. (currently amended): The process of claim 9 ~~claims 9 and 10~~ wherein the composition is extruded at a temperature of at most 275° C ~~or lower~~.
12. (original): The process of claim 11 wherein the composition is extruded at a temperature ranging from 260° to 275° C.
13. (currently amended): A thermally bonded non-woven fabric comprising ~~the fibres of claims 1-8~~ fibres comprising a propylene polymer composition (A) having an MFR value from 4 to 50 g/10 min, and being selected from:
- i) a crystalline propylene random copolymer or a crystalline propylene polymer composition selected from:

- a) a copolymer or polymer composition containing at least 0.8% by weight of ethylene and optionally at least one of C₄-C₁₀ α -olefins and having a melting temperature of 155° C or higher, a content of fraction soluble in xylene at room temperature lower than 5% by weight, a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95°C by temperature rising elution fractionation (TREF) with xylene to the xylene soluble fraction, higher than 8; and
- b) a copolymer or polymer composition containing more than 2.5 wt% by weight of ethylene and optionally at least one of C₄-C₁₀ α -olefins and having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95°C by TREF with xylene to the xylene soluble fraction at room temperature, higher than 4; and
- ii) a crystalline propylene polymer composition having a melting temperature of at least 153° C ~~or higher~~, a content of fraction soluble in xylene at room temperature lower than 10% by weight; the composition containing at least one of (1) at least 0.64 wt% of ethylene and (2) C₄-C₁₀ α -olefin recurring unit and comprising (percent by weight):
 - I) 20-80% of at least one of a crystalline propylene homopolymer and a crystalline propylene random copolymer containing at least one of (i) up to 1.5% by weight of ethylene and (ii) C₄-C₁₀ α -olefin; and
 - II) 20-80% of a crystalline random copolymer selected from:
 - IIa) a copolymer of propylene with 0.8 to 10% by weight of ethylene; provided that the difference in the ethylene content between polymer I) and polymer IIa) is at least 0.8 percentage unit with respect to the weight of the (co)polymer concerned; and
 - IIb) a copolymer of propylene with 1.5 to 18% by weight of a C₄-C₁₀ α -olefin and optionally ethylene; provided that the difference in the comonomer content between polymer I) and polymer IIb) is at

least 1.5 percentage units with respect to the weight of the (co)polymer concerned; and

IIc) a mixture of copolymer IIa) and copolymer IIb).

14. (currently amended): A composite non-woven fabric comprising two or more layers wherein at least one layer is made of ~~the~~ thermally bonded non-woven fabric ~~of claim 13.~~ comprising fibres comprising a propylene polymer composition (A) having an MFR value from 4 to 50 g/10 min, and being selected from:

i) a crystalline propylene random copolymer or a crystalline propylene polymer composition selected from:

a) a copolymer or polymer composition containing at least 0.8% by weight of ethylene and optionally at least one of C₄-C₁₀ α -olefins and having a melting temperature of 155° C or higher, a content of fraction soluble in xylene at room temperature lower than 5% by weight, a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95°C by temperature rising elution fractionation (TREF) with xylene to the xylene soluble fraction, higher than 8; and

b) a copolymer or polymer composition containing more than 2.5 wt% by weight of ethylene and optionally at least one of C₄-C₁₀ α -olefins and having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95°C by TREF with xylene to the xylene soluble fraction at room temperature, higher than 4; and

ii) a crystalline propylene polymer composition having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight; the composition containing at least one of (1) at least 0.64 wt% of ethylene and (2) C₄-C₁₀ α -olefin recurring unit and comprising (percent by weight):

I) 20-80% of at least one of a crystalline propylene homopolymer and a crystalline propylene random copolymer containing at least one of (i) up to 1.5% by weight of ethylene and (ii) C₄-C₁₀ α -olefin; and

II) 20-80% of a crystalline random copolymer selected from:

IIa) a copolymer of propylene with 0.8 to 10% by weight of ethylene; provided that the difference in the ethylene content between polymer I) and polymer IIa) is at least 0.8 percentage unit with respect to the weight of the (co)polymer concerned; and

IIb) a copolymer of propylene with 1.5 to 18% by weight of a C₄-C₁₀ α -olefin and optionally ethylene; provided that the difference in the comonomer content between polymer I) and polymer IIb) is at least 1.5 percentage units with respect to the weight of the (co)polymer concerned; and

IIc) a mixture of copolymer IIa) and copolymer IIb).

15. (currently amended): A process for the production of non-woven fabric of claim 13, comprising thermalbonding fibres which comprises a propylene polymer composition (A) having an MFR value from 4 to 50 g/10 min, and being selected from:

i) a crystalline propylene random copolymer or a crystalline propylene polymer composition selected from:

a) a copolymer or polymer composition containing at least 0.8% by weight of ethylene and optionally at least one of C₄-C₁₀ α -olefins and having a melting temperature of at least 155° C, a content of fraction soluble in xylene at room temperature lower than 5% by weight, a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95°C by temperature rising elution fractionation (TREF) with xylene to the xylene soluble fraction, higher than 8; and

b) a copolymer or polymer composition containing more than 2.5 wt% by weight of ethylene and optionally at least one of C₄-C₁₀ α -olefins and having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight and a value of the ratio of the polymer fraction collected at the temperature range from 25° to 95°C by TREF with xylene to the xylene soluble fraction at room temperature, higher than 4; and

ii) a crystalline propylene polymer composition having a melting temperature of 153° C or higher, a content of fraction soluble in xylene at room temperature lower than 10% by weight; the composition containing at least one of (1) at least 0.64 wt% of ethylene and (2) C₄-C₁₀ α-olefin recurring unit and comprising (percent by weight):

I) 20-80% of at least one of a crystalline propylene homopolymer and a crystalline propylene random copolymer containing at least one of (i) up to 1.5% by weight of ethylene and (ii) C₄-C₁₀ α-olefin; and

II) 20-80% of a crystalline random copolymer selected from:

IIa) a copolymer of propylene with 0.8 to 10% by weight of ethylene; provided that the difference in the ethylene content between polymer I) and polymer IIa) is at least 0.8 percentage unit with respect to the weight of the (co)polymer concerned; and

IIb) a copolymer of propylene with 1.5 to 18% by weight of a C₄-C₁₀ α-olefin and optionally ethylene; provided that the difference in the comonomer content between polymer I) and polymer IIb) is at least 1.5 percentage units with respect to the weight of the (co)polymer concerned; and

IIc) a mixture of copolymer IIa) and copolymer IIb). ~~wherein the fibres~~

~~of claims 1 to 8 are subjected to thermal bonding.~~

16. (currently amended): A crystalline propylene polymer composition having an MFR value from 4 to 50 g/10 and at least one of an ethylene and a ~~and/or~~ C₄-C₁₀ α-olefin content of at least 0.64 wt% and comprising (percent by weight):

I) 20-80% of a crystalline propylene homopolymer or crystalline propylene random copolymer containing at least one of (i) up to 1.5% by weight of ethylene and (ii) and/or C₄-C₁₀ α-olefin; and

II) 20-80% of a crystalline random copolymer of propylene with higher than 5 to 9% by weight of ethylene;

the ~~said~~ composition having a melting temperature of at least 153° C ~~or higher~~ and a content of fraction soluble in xylene at room temperature lower than 9% by weight.

17. (original): The composition of claim 16 having MFR values from 6 to 15 g/10 min.
18. (currently amended): A process for the polymerisation preparing the crystalline propylene polymer composition having an MFR value from 4 to 50 g/10 and at least one of an ethylene and a C₄-C₁₀ α -olefin content of at least 0.64 wt% and comprising (percent by weight):

 - I) 20-80% of a crystalline propylene homopolymer or crystalline propylene random copolymer containing at least one of (i) up to 1.5% by weight of ethylene and (ii) C₄-C₁₀ α -olefin; and
 - II) 20-80% of a crystalline random copolymer of propylene with higher than 5 to 9% by weight of ethylene;

the composition having a melting temperature of 153° C or higher and a content of fraction soluble in xylene at room temperature lower than 9% by weight; the process being

~~of claims 16 and 17~~ carried out in at least two separate subsequent stages, wherein in at least two polymerisation stages the relevant monomers are polymerised to form polymer I ~~(I)~~ and in the other stage(s) the relevant monomers are polymerised to form polymer II, ~~(II)~~, ~~(H)~~, operating in each stage, except the first step, in the presence of the polymer formed and the catalyst used in the preceding stage.

19. (new): The fibre of claim 7 wherein the extrusion temperature ranges from 260° to 275° C.